REPORT

ON

LOCATION AND UTILISATION

OF

WASTELANDS IN INDIA

(Part XI–MAHARASHTRA)

WASTELANDS SURVEY AND RECLAMATION COMMITTEE
(MINISTRY OF FOOD AND AGRICULTURE)
JANUARY, 1962

PART XI

MAHARASHTRA

INTRODUCTION

Appointment of the Committee and the terms of reference

The uncultivated lands in the country may be broadly classified into the following two categories :—

(*a*) Lands which are really adjuncts of village *abadis* and are meant to serve as pastures and fuel forests or sites for the extension of *abadis*, and

(*b*) Lands in large-sized blocks which have either gone out of cultivation or have never been brought under cultivation.

2. With a view to utilising the latter category of lands which afford the greatest promise for increased agricultural production, the Government of India constituted a Committee, *vide* their letter No. F/1024/Spl/59, dated the 11th June, 1959 (Appendix A), with the following terms of reference :—

(*i*) to make a survey of land classified as "other uncultivated land excluding fallow lands" and "fallow lands other than current fallows" and locate areas where large blocks of land are available for reclamation and resettlement;

(*ii*) to suggest suitable measures for reclamation according to conditions in different areas and estimate the cost of reclamation and colonisation and the financial assistance and agricultural extension and training necessary for the settlers (the settlements being made on a co-operative basis);

(*iii*) to suggest the terms and conditions upon which settlement should be made, the areas to be allotted and the payments to be made by settlers' co-operative; and

(*iv*) to estimate the economic aspects of such reclamation in terms of the expenditure involved, the likely addition to food production and the employment and income that would become available to settlers and their families and to lay down the priorities *inter se* between different categories of reclaimable lands.

3. In order to ensure effective co-ordination and speedy completion of the work, each State Government/Union Territory was asked by the Government of India to appoint a fairly senior officer who would be able to devote sufficient time to the work of the Committee, help it in collecting the necessary information and carry on correspondence with it. This procedure facilitated the work of the Committee to a great extent in obtaining relevant data from the State Governments and in arranging the tours.

Programme of work

4. The Committee held its first meeting on the 7th July, 1959, when it discussed the plan of work and the staff requirements. In the second meeting held on the 4th August, 1959, a draft questionnaire was discussed and finalised. The questionnaire (Appendix B) was issued to all the State

Governments and Union Territories, with a request that their replies should be forwarded to the Committee by the 25th September, 1959. This questionnaire sought information mainly on the availability of wastelands in blocks of 1,000 acres or more and the prospects of resettlement in each State. Subsequently, as a result of the Committee's discussions with the Liaison Officers of the Punjab and Madhya Pradesh, it was felt that the availability of wastelands in blocks of 1,000 acres or more might be limited, and it was decided to obtain detailed information in respect of all blocks of wastelands measuring 250 acres or more. Accordingly, a letter was issued to all the State Governments (Appendix C) asking for this information.

5. It was laid down in the terms of reference that the Committee should complete its work and submit its proposals in respect of one State in about a month and then proceed to take up investigation in another State. The Committee, however, felt that such a procedure was neither feasible nor advisable as the different State Governments did not have the information required by the Committee readily available and the process of collection took some time. In some cases, special surveys had to be organised. The Committee, therefore, decided that it might take up investigations in respect of the following eight States together in the first phase, *viz.*, Punjab, Madhya Pradesh, Bihar, Kerala, West Bengal, Orissa, Andhra Pradesh and Mysore, and then take up the remaining States. But for this procedure, the work of the Committee would have been very much delayed.

6. After the reports in respect of the different States have been submitted, a general report covering the entire country will be presented which, *inter alia*, will deal with priorities between the different categories of reclaimable lands in the different States.

7. The report for each State will be divided into four sections. Section A will contain general observations about the State regarding its climate, soils, crops grown, irrigation facilities available, etc. Section B will deal with the areas offered for reclamation, their general characteristics, measures necessary for bringing the wastelands under cultivation, and the cost of reclamation. Section C will contain suggestions for follow-up and resettlement operations, if any, the estimated additional production from the reclaimed areas, and priorities between the different categories of reclaimable lands. In Section D, a summary of general conclusions and recommendations will be presented.

Problem

8. The main object of the Committee was to make a survey of lands classified as "other uncultivated lands excluding fallow lands" and "fallow ands other than current fallows", and locate large blocks for reclamation and resettlement.

9. In order to avoid ambiguity in the appraisal of the lands available n each of the above two categories, it is necessary to define the two terms. The classification of land-use adopted by the Directorate of Economics and Statistics, Union Ministry of Food and Agriculture, is nine-fold as under :—

(*i*) forests,
(*ii*) barren and unculturable lands,
(*iii*) land put to non-agricultural uses,

(*iv*) permanent pastures and meadows,
(*v*) areas under miscellaneous tree crops and groves,
(*vi*) culturable waste.
(*vii*) current fallows,
(*viii*) fallows other than current fallows, and
(*ix*) net area sown.

The lands classified under categories (iv), (v) and (vi) are grouped together and designated as "other uncultivated lands excluding fallow lands". The category "culturable waste" is defined to include all lands available for cultivation but not taken up for cultivation or abandoned after a few years for one reason or the other. Such lands may be fallow for more than five years and may be covered with shrubs and jungle. They may be assessed or unassessed, and may lie in isolated patches or blocks or within cultivated holdings. Lands reserved as pastures for grazing are not included under "culturable waste". Similarly, fallows of one year are classified as "current fallows", while those of 2-5 years are classified as "fallows other than current fallows". Lands left for growth of miscellaneous trees like bamboo, casuarina, fuel trees, etc. are not classified as "culturable waste".

10. Although the classification suggested by the Ministry of Food and Agriculture has been adopted in all the States, the Committee was informed during the course of discussions with the State officials that the concept of "other uncultivated lands excluding fallow lands" was not yet clearly understood. Lands which were classified as "culturable waste" at the time of settlement some years ago still continue to be shown as such in the revenue records even though they cannot be made culturable after incurring any reasonable expenditure. Similarly, some of the lands which are culturable continue to be classified as barren and unculturable or pasture lands. In some other cases, the pasture lands have been included in the category of culturable waste. Further, the category "other uncultivated lands excluding fallows" is treated as a sort of residual class in which are included all lands not accounted for under any other class.

11. In view of these considerations, we are of the view that the areas included in the two categories, *viz.*, "other uncultivated lands excluding fallow lands" and "fallow lands other than current fallows" may not fairly represent the actual extent of culturable wastelands in the country, and accordingly much reliance cannot be placed on the statistics supplied by the State Governments. The mere collection of statistics under the head "culturable waste" can serve but little purpose unless detailed information on the types of wastelands available in each State, the ownership of such lands, their availability in sizeable blocks and the cost of reclamation measures is available. We were glad to note that some of the States had realised the importance of collecting such statistics and had either started the necessary surveys or were preparing to do so for achieving the above object. This is a step in the right direction and any assistance that the Central Government can give in this matter will greatly facilitate the collection of vital statistics on proper land use. For the purpose of our report, we have relied on the data furnished to us by the revenue/agricultural agency of each State.

12. As regards resettlement, the terms of reference of the Committee enjoin upon it to locate areas where large blocks of land are available for reclamation and resettlement. We consider that the resettlement work is not the be-all and the end-all of our labours and that the main job is to

locate lands which can be reclaimed and brought under the plough for increasing the food resources of the country. We have, therefore, suggested resettlement schemes only in cases where food production would be hindered without resettlement work.

13. We have viewed the entire problem mainly from an agricultural angle, but at the same time, we have tried to deal with matters which go beyond the purely agricultural aspects of the subject, for we do recognise that the problem of utilisation of wastelands involves not merely the adoption of agricultural techniques but an appreciation of a variety of human and social aspects.

PART XI

Maharashtra

Preface

The report deals with the availability of wastelands in large-sized blocks in Maharashtra and the measures to be taken for their reclamation.

2. With a view to acquiring some knowledge of the wastelands found in the State, we undertook tours of certain representative areas between the 6th and 9th March, 1961. On the 6th March, 1961, wastelands in the district of Chanda were visited, while on the 8th and 9th March, 1961, the lands in the Jalgaon district were inspected. In Chanda, the Committee had detailed discussions with the officials of the State Government on Dina Project. The draft report of the Committee relating to the State was discussed with the members on the 22nd December, 1961, and then circulated to the co-opted members in the State. The report was later finalised.

3. We wish to express our gratitude to the officials of the Maharashtra Government who gave us the benefit of their views. We wish to thank particularly Shri G. N. Godse, Joint Director of Agriculture, Government of Maharashtra, who, in his capacity as Liaison Officer, furnished the necessary data required by the Committee.

4. We are highly indebted to Dr. S. P. Raychaudhri, Senior Specialist on Land, Planning Commission, for furnishing the data on the soils of the State, and for allowing us to make use of the facilities at the cartographic laboratory of the Indian Agricultural Research Institute, New Delhi, in printing the maps included in the Report.

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SECTION A

(General aspects)

General aspects

The State of Maharashtra consists of 26 districts, namely, Dhulia (West Khandesh), Nasik, Thana, Greater Bombay, Kolaba, Ratnagiri, Ahmednagar, Poona, Satara, Sangli (South Satara), Kolhapur, Sholapur, Jalgaon, Aurangabad, Parbhani, Bhir, Osmanabad, Nanded, Buldana, Akola, Amraoti, Yeotmal, Wardha, Nagpur, Chanda and Bhandara. The last eight districts constitute the Vidharba region of the State. The State comprises 230 talukas and 35,226 villages. The total geographical area of the State is 1,18,459 sq. miles.

2. The total population of the State, according to the 1951 census, is 3,45,04,294, which gives an average density of 270 persons per sq. mile as compared to 287 persons for the country as a whole. Sixty-four per cent of the population is dependent upon agriculture.

3. The State of Maharashtra can broadly be divided into three principal physical divisions as follows :—

(*i*) Coastal region,
(*ii*) the Western Ghats, and
(*iii*) the plateau.

4. The coastal region is a narrow strip on the west coast about 250 miles long. A number of streams and rivers flow from the ghats to the sea across this region, where they deposit on the land fertile silt brought in flood waters from the mountains. The Western Ghats run almost parallel to the west coast, leaving a narrow strip of land between the sea and the mountains. This narrow strip of land known as the Konkan stretches from Daman to Vengurla for a distance of about 350 miles. The land in this tract is generally undulating, and the soil is far from fertile, except in North Konkan where there is a flat alluvial belt along the coast formed by the rivers Ulhas, Vaitarna, Savitri etc., in their lower courses. The North Konkan belt is not more than 10 miles wide with a series of parallel ranges in the background.

5. The plateau lies to the east of the Western Ghats and is intersected by rivers which rise in the Ghats and flow eastward. In the north is the Satpura range running almost in a straight line from east to west. The main Western Ghats stretch out into the table-land. To the north of Nasik is the Satmala range with its continuation to the Balaghat range which extends to the eastern border of Vidharba and Marathwada. The transverse ranges to the south of Nasik are much shorter and of little consequence.

6. The State is drained by a number of rivers, namely, Tapti, Godavari, Bhima, Krishna, Wardha and Wainganga. The smaller rivers are the tributaries of one or the other of these rivers.

Climate

7. Due to its geographical position and topography, Maharashtra has a wide range of climate. Along the coastal belt, the winter is mild and the

temperature remains more or less constant throughout the year. The rainfall varies from 65 inches in the north to 100 inches in the south, but is confined to a few months during the south-west monsoon period. In the hilly region of the Western Ghats, the rainfall is 100-150 inches. Because of the altitude the weather in the hilly region is cool during the summer months. In the transition belt known as the *maval* which lies to the east of the Western Ghats, the rainfall ranges from 80 inches in the west to 35 inches in the east, but it is fairly well distributed. The summer here is mild as compared to the eastern portion. In the eastern belt or the *desh*, the rains are generally late and uncertain. The precipitation in this region ranges from 15 inches to 25 inches. The summers are hot and dry. This area has semi-arid conditions of climate and vegetation.

8. The soils of the State can be classified into black soils, laterite and lateritic soils, red and grey soils, and coastal alluvium (*vide* Map 1).

8.1. *Black soils* form an extensive belt in the State. The clay humus complex imparts to these soils their characteristic colour. They vary in depth, and are usually clayey in texture, the average clay content being 50 per cent. They have consequently high water-holding capacity. Lime concretions are invariably present, but they may be found through the profile or concentrated at certain depths. The pH of these soils generally ranges from 7.2 to 8.5. In the uplands the soils are light-coloured and of low fertility, and in the valleys they are darker, deeper and richer as these are constantly being enriched by washings from the uplands. They are poor in phosphorus, nitrogen and organic matter, but are moderately provided with potash. In the deep black alluvial soils of the Tapti valley and along the Godavari, excellent crops of wheat are grown under irrigated conditions. The other important crops cultivated in these soils are groundnut, cotton and *jowar*. Black soils are sub-divided into deep black soils, medium black soils, and shallow black soils.

8.1.1. *Deep black soils* occur along the courses of the Tapti, Godavari, Bhima and Krishna, and are developed mainly on the alluvial material. They are found in low-lying situations or on flat surface. They occupy an area of about 47,000 square kilometres.

8.1.2. *Medium black soils* cover the largest area under black soils in the State, occupying an area of over 2,50,000 square kilometers. They vary in depth from 4 to 5 feet, are comparatively less clayey in texture, and have a higher lime content. The clay content varies from 35 to 50 per cent. The soils gradually change in colour from deep black at the surface to a lighter shade in the lower horizons. They are poor in phosphoric acid (0.05 per cent) and organic matter (less than 1.5 per cent), but are fairly well provided with potash (ranging from 0.05 to 0.6 per cent). The calcium carbonate content ranges from 1 to 3 per cent in the lower horizons.

8.1.3. *Shallow black soils* occupy an area of about 11,000 square kilometers. These are residual soils derived from trap and usually occur on hill slopes and plateaus. They are lighter in colour, and are well suited for perennial or seasonal irrigation in arid regions, particularly when they are adequately manured.

8.2. *Lateritic soils* are found in the districts of Ratnagiri and Satara and the western portion of Kolhapur, and form part of the lateritic belt on the West Coast. The soil profile has on the surface clay loam of varying depth, and is underlain with layers of laterite. Such soils support good vegetative cover. They are fair in organic matter, but poor in phosphate and potash. They respond well to the application of phosphate and potash. The pH ranges from 5.5 to 6.5.

8.3. *Red and grey soils* are predominantly found in the Thana and Kolaba districts and in the western portion of the Poona district. These are a complex group of soils varying in depth and texture. On the hill slopes, the soils are reddish brown to yellowish red in colour, and vary in depth from 1½ ft. to 3½ ft. They are sandy loam with gravels and iron concretions and are slightly acidic in reaction. On the flat lands and in the valleys, the soils change to dark reddish grey in colour, and are deeper. They are generally loam, and have neutral to slightly acidic reaction. In the valleys, paddy is the main crop in the *kharif* season, while crops like *tur* (*Cajanus cajan*), *mung* and *Dolichos lablab* are grown to a small extent in the *rabi* season.

8.4. *Coastal alluviums.*—These soils are similar to the coastal alluviums found on the West Coast. They are deep sandy soils with a very low clay content. In lowlying areas or due to the ingress of seawater into the sandy belt, salinity develops in the soil, and saline lands are found in unfavourable situations. The surface layers of these soils are clay loams, are cloddy in structure, and show extensive incrustations of salt. They are grey in colour. The lower layers of these soils are silty loams. Calcium carbonate is found in some quantities in the profile.

9. The important crops grown in the different soil zones are as below:—

Soil Zone	
Black soils	*Jowar*, *bajri*, wheat, paddy, gram, cotton, groundnut, pulses, oilseeds, sugarcane, fruits, vegetables.
Lateritic soils	Paddy, *ragi*, sugarcane, *bajri*, *jowar*, wheat, gram.
Red and grey soils	Paddy, *ragi*.
Coastal alluviums	Paddy, *ragi*, bananas, cocoanut, vegetables.

10. The total irrigated area in the State in the year 1956-57 was 26,01,700 acres out of the total cropped area of 4,63,81,600 acres, representing about 5.6 per cent of the cropped area. The main source of irrigation is wells, accounting for 52 per cent of the net irrigated area. Canals account for 25 per cent, tanks 20 per cent and other sources 3 per cent. The main crops grown under irrigation are rice, wheat, *jowar*, fruits and sugarcane.

Natural vegetation, crops grown and yields obtained.

11. There is a wide variation in the natural vegetation found in the State, depending upon climatic conditions. In the Western Ghats and to the west of them, there is luxuriant growth of timber trees as also bushy undergrowth. On the eastern side of the Ghats, thorny bushes predominate except in the low mountain ranges of Central India. The rainfall in the Western Ghats is about 80 inches, and the vegetation consists of evergreen

tropical forests composed mainly of *Artocarpus* species. In areas receiving precipitation between 60 and 80 inches, the vegetation consists of tropical, moist deciduous forests with or without teak. In dry areas thorny bushes and shrub jungles predominate, the most important species being *Acacia arabica.*

12. The important food crops grown in the State are *jowar, bajri,* rice and wheat. Among the food crops, *jowar* has the largest share of the cultivated area, covering 14.18 million acres during 1958-59, followed by *bajri* with an area of 4.37 million acres. The total production of *jowar, bajri,* rice and wheat was 3.25, 0.45, 1.27 and 0.41 million tons respectively. The total production of food-grains during the year was 6.51 million tons.

13. Among the commercial crops, oilseeds, particularly groundnut and linseed, are the most important crops in the State. Groundnut occupied an area of 2.81 million acres, and its production was 0.6 million tons. Sugarcane and cotton are the other important commercial crops, the production of which was 0.7 million tons and 1.1 million bales respectively.

14. The average yields of principal crops grown in the different districts of the State are given in Appendix D.

SECTION B

(Description of blocks and measures for reclamation)

Land utilisation

15. According to the land utilisation statistics for the year 1957-58, the State of Maharashtra has an area of 76.47 million acres classified as under :—

	acres (million)
(*i*) Forests	13·38
(*ii*) Land not available for cultivation—	
(*a*) Barren and unculturable land	4·61
(*b*) Land put to non-agricultural use	1·69
(*iii*) Other uncultivated land excluding fallows—	
(*a*) Culturable waste	2·30
(*b*) Permanent pastures and other grazing lands	0·54
(*c*) Land under miscellaneous tree crops and groves	3·73
(*iv*) Current fallows	2·41
(*v*) Fallows other than current fallows	3·52
(*vi*) Net area sown	44·29
TOTAL	76·47

16. It would be observed that the total area classified as "other uncultivated land excluding fallows" is 6.57 million acres, while the area classified as "fallows other than current fallows" is 3.52 million acres. The district-wise distribution of the areas under each of the above heads is given in Appendix E.

17. Of the total area of 10.09 million acres under the head "other uncultivated lands excluding fallows" and "fallows other than current fallows", the Government of Maharashtra has offered an area of 43,020 acres only for reclamation in compact blocks of 250 acres or more. This is a relatively small area as compared with the figures of wastelands reported in the statement on land utilisation in paragraph 15. It was explained to us that, although the total area reported in the revenue records under culturable waste was 2.3 million acres, a large proportion of it had already been disposed of for cultivation on *eksali* lease by the members of the Backward Classes including the *adivasis*. The question of permanent allotment of wastelands had also been examined by the State Government, and detailed instructions had been issued to the District Collectors to complete the work of land distribution by the 31st March, 1961. The priorities for allotment of land were also indicated in these orders, the Scheduled Castes and the Scheduled Tribes having been given a very high priority.

18. In order to complete the work of land distribution as expeditiously as possible, a pilot project for the disposal of wastelands was undertaken in 1960 in six districts of Western Maharashtra. As a result of the experience thus gained, the distribution of wastelands in the Vidharba region

of the State has also been completed, and this process was in full swing in the other regions. The work of land distribution in the entire State was expected to be completed by the 31st March, 1961. In the circumstances, there was little possibility of large-sized blocks of wastelands still being available in the State for distribution, and indeed, it was likely that most of the wastelands reported to us from the different districts of the State, might not be available after the distribution process was over.

19. The land for distribution comprises (i) Government wastelands, (ii) forest lands suitable for cultivation, (iii) tank-bed lands, (iv) lands which become available for disposal under the Tenancy Laws, and (v) lands which may become available for disposal under the proposed ceiling laws. An important feature of the land distribution project is the provision of adequate financial assistance, either in the form of loans or as grant, for the development of land, construction of irrigation wells, and supply of improved seeds, implements, bullocks, etc. It appears to us that the State Government are doing their best to bring the wastelands under cultivation as speedily as possible, but it may be necessary to sound a note of warning that, unless rapid surveys are conducted to delineate the wastelands broadly on the basis of proper land-use, the diversion of lands which are more suited for pastures, for arable cultivation may in the end result in the greater impoverishment of these lands due to soil erosion. The problem of soil erosion is likely to present itself more acutely in the cultivation of marginal lands in these scarcity areas.

Availability of wastelands

20. The wastelands offered for reclamation in the State can be broadly divided into the following two categories:—

I—Dry lands, and

II—lands infested with thick growth of bushes and jungle.

21. The distribution of wastelands in categories I and II in the various districts is given below :—

District	Area available in categories (acres)		Total (acres)
	I	II	
West Khandesh	28,450	—	28,450
Jalgaon	3,471	—	3,471
Buldana	1,974	—	1,974
South Satara	900	—	900
Nasik	1,915	—	1,915
Kolaba	—	2,122	2,122
Chanda	—	4,188	4,188
TOTAL ..	36,710	6,310	43,020

22. Map II shows the location of blocks of wastelands in categories I and II.

23. A few comments in respect of each block are given below, while fuller details are tabulated in Appendix F.

CATEGORY J

Details of blocks in different categories

24. Forty-six blocks comprising a total area of 36,710 acres have been located for reclamation in this category, as per details given below :—

District	Block No.	Area (acres)
West Khandesh	1—28	28,450
Jalgaon	29—36	3,471
Buldana	37—44	1,974
South Satara	45	900
Nasik	46	1,915

25. *Blocks* 1—22 comprising an area of 19,819 acres are located in the Dhulia taluka of the West Khandesh district. The land in these blocks has a gentle slope and is covered with shrubs and bushes. The soil is black and has a depth of barely 6—9 inches. The rainfall is about 21 inches. No irrigation is available. The cost of reclamation is estimated at Rs. 100 per acre.

26. *Blocks* 23-24 measuring 2,131 acres are situated in the Sindhkeda taluk of the West Khandesh district. The land in these blocks has a gentle slope, but is rocky. The area is not fit for cultivation. The rainfall is 13—17 inches. No irrigation is available.

27. *Blocks* 25—28 comprising 6,500 acres are located in the Sakri taluka of the West Khandesh district. Part of the area is suitable for cultivation as it is, while in the remaining area, clearance of bushes, shrubs and trees will be necessary. The soil has a depth of about 4 feet. The rainfall is 23—25 inches. No irrigation is available. The cost of reclamation is estimated at Rs. 100 per acre.

28. *Blocks* 29—32 measuring 1,570 acres are situated in the Bhusawal taluka of the Jalgaon district. Of the total area of 1,570 acres, only 713 acres can be made fit for cultivation after adopting suitable measures, but the remaining area is either hilly and rocky, or is subject to floods from the Tapti river. The land is gently sloping and has a soil depth of 1-2 feet. The soil is poor in organic matter. The rainfall is about 25 inches. No irrigation is available. The cost of reclamation is estimated at Rs. 50 per acre.

29. *Block* 33 comprising 512 acres of pasture land is located in village Golkhed, in the Jamner taluka of the Jalgaon district. The land is gently sloping and has a soil depth of barely six inches, with *murum* below the soil layer. The rainfall is 20—25 inches. No irrigation is available. The area does not appear to be fit for cultivation.

30. *Blocks* 34—36 measuring 1,389 acres are situated in the Chalisgaon taluka of the Jalgaon district. About 250 acres are already under cultivation on *eksali* lease. The land is infested with small shrubs and bushes and can be cleared with the help of manual labour. The soil in these blocks is black, with a slope of about 6 per cent. The rainfall is about 24 inches. No irrigation is available. The cost of reclamation will be about Rs. 50 per acre.

31. *Block* 37 comprising 234 acres is located in village Atali, in the Khamgaon taluka of the Buldana district. The area is rocky and is not fit for cultivation.

32. *Block* 28 measuring 308 acres is in village Borajwala, in the Khamgaon taluka of the Buldana district. About 75 acres are already under cultivation. The land is flat, but it is infested with small shrubs and bushes. The soil is black. The rainfall is 25—30 inches. No irrigation is available. The cost of reclamation is estimated at Rs. 50 per acre.

33. *Blocks* 39—44 comprising 1,432 acres are located in the Mehkhar taluka of the Buldana district. The land is infested with weeds, shrubs and bushes. The land is gently sloping, and the soil depth is about 12 inches. The soil is mostly black, but at some places it is red. The rainfall is 25—30 inches. No irrigation is available. The cost of reclamation is likely to be heavy.

34. *Block* 45 measuring 900 acres is situated in villages Vita and Yetgaon in the South Satara district. The land is gently sloping but is rocky. The rainfall is about 22 inches. No irrigation is available. The area is not fit for cultivation.

35. *Block* 46 comprising 1,915 acres is located in village Kharde, in the Kalwan taluka of the Nasik district. The communications are poor. The land is infested with thick jungle and is also rocky. The rainfall is 35—40 inches. No irrigation is available. The cost of reclamation is likely to be heavy.

36. To sum up, it may be stated that the general feature of the lands included in category I is that they are situated in tracts of low and variable rainfall ranging from 20 to 30 inches. These lands are generally poor and have barely a soil depth of 6—12 inches. The soil is gravelly or rocky, as found in the South Satara and Nasik districts and in certain parts of the West Khandesh, Jalgaon and Buldana districts. The lands are suitable for the development of pastures and should not be opened up for arable cultivation, except in areas where there is moderate rainfall of 25 inches and above, and where the soil has sufficient depth to support the growth of crops. Even then, suitable water and soil conservation measures should be adopted for successful cultivation under conditions of low and variable rainfall, since the absence of such measures will result in the failure of crops during long periods of drought and also aggravate the problem of soil erosion.

CATEGORY II

37. Nine blocks comprising a total area of 6,310 acres have been located for reclamation in this category, as per details given below :—

District	Block No.	Area (acres)
Kolaba	47—51	2,122
Chanda	52—55	4,188

38. *Blocks* 47—51 comprising 2,122 acres of hilly tracts and thick jungles are located in the Roha, Sudhagad and Karjat talukas of the Kolaba district. These lands will have to be cleared with the help of tractors. Part of the area is flat, and the remaining portion is slopy. The soil is red. The

rainfall is about 125 inches. No irrigation is available in any of the blocks. In block 50, however, lift irrigation can be provided from the Ulhas river. The cost of reclamation is estimated at Rs. 200 to Rs. 400 per acre in blocks 47 and 49—51, while in block 48, it may be as high as Rs. 1,500 due to the steep nature of the terrain.

39. *Block* 52 comprising 2,105 acres is situated at a distance of 10—12 miles from the *pucca* road from Armori to Gadchiroli, in the Gadchiroli taluka of the Chanda district. The communications are poor. The land is infested with trees, shrubs and bushes, and will have to be cleared with the help of tractors. The soil is red and sandy in texture. The rainfall is about 60 inches. No irrigation is available. The cost of reclamation is estimated at Rs. 100 per acre.

40. *Block* 53 measuring 1,446 acres is located in village Chak Darshani, in the Gadchiroli taluka of the Chanda district. Other details are the same as for block 52.

41. *Blocks* 54-55 comprising 637 acres are located in Chak Petgaon and Chak Bembal in the Chanda taluka of the same district. The land is infested with jungle, and suitable soil conservation measures will also be necessary to make it fit for cultivation. The soil is black and red. The rainfall is about 50 inches. Irrigation facilities can be made available to the area from the Asola tank, but water-channels will have to be constructed. The cost of reclamation will be about Rs. 200 per acre.

Additional information

42. During our visit to the Chanda district, we were informed that the Government had approved of the Dina irrigation project at an estimated cost of 2.44 crores. This project can command an area of about 30,000 acres, but only 18,000 acres of cultivated land are available for irrigation at the tail-end of the canal. The cost of the project thus works out to Rs. 1,350 per acre. On the other hand, 30,500 acres comprising 12,000 acres of wastelands and 18,000 acres of class 'B' forest lands are available in the upper reaches of the canal, and if this area is taken up for reclamation, an additional area of about 12,000 acres will become available for irrigation. The cost of the project will in that case be reduced from Rs. 1,350 to Rs. 800 per acre. Furthermore, the length of the canal will be reduced by about one-third, resulting in a further saving of about Rs. 30 lakhs. The net result will be a substantial reduction in the estimated cost of the project from Rs. 1,350 to Rs. 700 per acre. A reference to Map III will make the matter clear.

43. We are of the view that, if the suggestions made by us in the preceding paragraph are accepted, a large area of 30,500 acres of waste and forest lands, situated in the Gadchiroli tehsil of the Chanda district, can be brought under the irrigation command of the Dina project and developed into a prosperous agricultural colony. In this connection we make the following proposals :—

(*i*) The forest lands located in the Gadchiroli tehsil of the Chanda district may be released for cultivation.

(*ii*) The cost of reclaiming 12,500 acres of wastelands and 18,000 acres of class 'B' forest lands, which is estimated at Rs. 175 per acre, may be borne by the Agriculture Department, but not charged to the Dina project. (We were informed that a sum of Rs. 10 lakhs had been provided in the Project as subsidy for reclaiming 10,000 acres of wastelands.)

(*iii*) The question of setting up lift irrigation projects along the Wainganga river should be investigated, so that the cultivated lands at the tail-end which were to be irrigated from the projected canal from the Dina irrigation project, may receive their irrigation supply from the lift irrigation projects. There seem to be good prospects of setting up lift irrigation projects along the Wainganga.

(*iv*) The possibility of establishing a mechanised farm in the area to be irrigated from the Dina project should be investigated.

SECTION C

(Disposal of reclaimed lands for cultivation)

Nature of ownership of wastelands and their disposal for cultivation

44. In this Section, we deal with the various measures needed for the disposal and development of wastelands which have been located in the State. These measures would primarily depend upon the nature of the ownership of wastelands. A statement showing the break-down of wastelands, according to their ownership, is given in Appendix G. It would be observed from the statement that, except for a small area of 3,837 acres, the rest of the area belongs to the Government. A small area belongs to the village Panchayats. The problems involved in the disposal of wastelands are discussed below.

Government lands

44.1. As stated in paragraph 18, it is likely that most of the wastelands belonging to the Government have already been distributed, since, according to the information furnished to us by the State Government, the work of land distribution in the entire State was to be completed by the 31st March, 1961. The noteworthy feature of the land distribution programme in the State is the provision of adequate financial assistance to the allottees, either in the form of loans or as grant, for land development, construction of irrigation wells, supply of improved seeds, etc. The Backward Classes, including the Scheduled Tribes and their co-operative societies, have been assigned a fairly high priority under the scheme. The scheme also envisages the permanent allotment of the wastelands to the allottees so as to provide an incentive for their speedy reclamation and cultivation to increase food production. As the scheme has worked satisfactorily, we suggest that it should be applied to the other areas where the land distribution work is still to be carried out. We would, however, like to point out that, instead of paying to the allottees specified amounts for the development of land, as provided in the scheme, the work should be carried out departmentally, and the reclaimed lands then handed over to the allottees for cultivation.

Private lands

44.2. The area of wastelands belonging to private individuals, is 1,208 acres in category I, and 1,389 acres in category II. The lands in category I are located in a belt liable to low and variable rainfall where crop growing is a hazard unless suitable soil conservation measures are undertaken. The expenditure on these measures should be shared in the following manner :

(*i*) 75 per cent of the expenditure may be advanced as loans to the cultivators to be recovered in easy instalments spread over a period of 10—15 years, and

(*ii*) 25 per cent of it should be treated as subsidy to be shared equally by the Centre and the State.

44.2.1. The cost of reclamation of the land in category II, is rather high, and it will not be within the reach of the cultivators to undertake reclamation measures on their own. We, therefore, suggest that the work should be undertaken by the State Government on behalf of private individuals, and the expenditure shared in the manner indicated above.

Village Panchayat Lands

44.3. These lands, after reclamation, may be given back to the village panchayats for arranging their cultivation.

45. The general crop patterns for the lands in the two categories are given below :—

45.1. *Category I.* The blocks included in this category are situated in a tract of low and variable rainfall ranging from 20 to 30 inches. The lands are generally poor and have barely a soil depth of 6—12 inches. They are, therefore, more suited for the development of pastures, except those areas which receive moderate rainfall of 25 inches or above, and where the soil has sufficient depth to support the growth of crops. In such areas, *jowar, kulthi,* cotton, groundnut, *bajri,* sesamum, etc. may be grown.

45.2. *Category II.* In the Kolaba district where the rainfall is more than 125 inches, crops like paddy and *nagli* can be grown. In the Chanda district where the rainfall is about 60 inches, the main crop of the area is paddy. Other crops like *jowar* and wheat can also be grown. When irrigation becomes available, it will be profitable to grow sugarcane, vegetables and other irrigated crops.

Economic aspects of reclamation

46. We may now examine the economic aspects of reclamation in terms of the addition to food production with reference to the expenditure involved.

46.1. It would be observed from the details given in paragraphs 25—35 that, of the total area of 36,171 acres located for reclamation in the districts of West Khandesh, Jalgaon, Buldana, South Satara and Nasik, the reclamation of 7,124 acres is not economic because the area is either not fit for cultivation, or its reclamation is too costly. In these districts, the average yield of *jowar* ranges from 3 to 7 maunds per acre, of *bajri* from 2 to 5 maunds, of groundnut from 5 to 8 maunds, and of cotton from 2 to 3 maunds. It is obvious that the yields of the crops grown in dry lands in these districts are low, and unless suitable soil conservation measures are adopted, crop growing is a gamble in the rains. However, past experience shows that the contour-bunding of dry land for the conservation of soil moisture, followed by the adoption of suitable dry farming methods of cultivation, increases the yields of crops appreciably. On a conservative estimate, additional food production may be assumed as 4 maunds per acre (when other crops are grown, their equivalents in terms of food crops are taken into account).

46.2. As regards the wastelands in category II, these are found in the districts of Chanda and Kolaba where there is sufficient rainfall. The average yield of paddy in these districts ranges from 15 to 25 maunds per acre. On a conservative estimate, we may assume the yield of 10 maunds of foodgrains per acre for lands included in this category.

47. To assess the relative economic benefits between the two categories of reclaimable lands, the figures of estimated additional food production should be studied in relation to the cost of reclamation and other relevant factors. Table I gives the area proposed for reclamation in each category, the cost of reclamation, the additional food production, and the cost of reclamation per maund of additional food production.

TABLE I

Cost of reclamation of land in the two categories and estimated additional production

Category	Description	Area proposed for reclamation (acres)	Average cost of reclamation per acre (Rs.)	Total cost of reclamation (Rs.)	Additional production per acre (maunds)	Total additional production (maunds)	*Value of Total additional production (Rs.)	Value of additional production per acre (Rs.)	Average cost of reclamation per maund of additional production (Rs.)
I	Dry lands	29,586**	94	27,95,250	4	1,18,344	9,46,752	32	23·5
II	Lands infested with thick growth of bushes and jungle	5,998†	171	10,25,500	10	59,980	4,79,840	80	17·1
	TOTAL ..	35,584	107	38,20,750		1,73,324	14,26,592		

*The main food crops of the areas included in categories I and II are paddy, *bajri*, *Jowar*, groundnut and sesamum. A common price of Rs. 8 per maund is assumed.

**Excludes 7,124 acres of which the cost of reclamation is reported to be very high, and of areas which are not fit for cultivation.

† Excludes 312 acres of which the cost of reclamation is reported to be very high.

48. It would be seen from the table that the cost of reclaiming 35,584 acres of wastelands in categories I and II (exclusive of the lands of which the cost of reclamation is reported to be very high, and of areas which cannot be brought under cultivation) comes to Rs. 38.20 lakhs, *i.e.*, Rs. 107 per acre. The estimated additional production from the reclaimed land is 6,532 tons, valued at Rs. 14.27 lakhs. Thus, the value of production will cover the cost of reclamation in three crop seasons.

49. As regards the economics of reclamation between the two categories of wastelands, the areas included in category II seem to be more profitable in terms of additional food production which is about 10 maunds for an expenditure of Rs. 170 per acre on land improvement. On the other hand, the additional food production from the reclaimed lands included in category I is 4 maunds per acre for an expenditure of Rs. 94 on reclamation.

50. In view of what has been stated in paragraph 49 above, we recommend that the following order of priority may be assigned to the two categories of wastelands :—

Category	*Priority*
II	1
I	2

SECTION D

(Summary of conclusions and recommendations)

1. Of the total area of 10.09 million acres under the heads 'Other uncultivated land excluding fallows' and 'fallows other than current fallows', an area of 48,020 acres only has been located in the State for reclamation in compact blocks of 250 acres or more. This area is relatively small in view of the fact that the bulk of wastelands has already been disposed of by the State Government, for cultivation on *eksali* lease by the members of the Backward Classes including the *adivasis*.

(*Paragraph* 17)

2. The State Government are doing their best to bring the wastelands under cultivation as speedily as possible, but it is necessary that rapid surveys should be conducted to delineate the wastelands broadly on the basis of proper land-use so that the diversion of lands which are more suited for pastures, for arable cultivation may not in the end result in greater impoverishment of these lands due to soil erosion.

(*Paragraph* 19)

3. The wastelands found in the State can be broadly divided into the following two categories :—

I—Dry lands, and

II—lands infested with thick growth of bushes and jungle.

(*Paragraph* 20)

4. The distribution of wastelands in the two categories is as under :—

Category	*Area* (acres)
I	36,710
II	6,310
	43,020

(*Paragraph* 21)

5. The wastelands included in category I are situated in tracts of low and variable rainfall ranging from 20 to 30 inches. These lands are generally poor and have barely a soil depth of 6—12 inches. The lands are suitable for the development of pastures and should not be opened up for arable cultivation, except in areas where there is moderate rainfall of 25 inches and above, and where the soil has sufficient depth to support the growth of crops. Even then, suitable water and soil conservation measures should be adopted for successful cultivation under conditions of low and variable rainfall, since the absence of such measures will result in the failure of crops during long periods of drought and also aggravate the problem of soil erosion. The average cost of reclamation of dry lands is estimated at Rs. 100 per acre.

(*Paragraph* 36)

6. The wastelands in category II are found in the districts of Chanda and Kolaba where there is sufficient rainfall. The cost of reclamation is estimated at Rs. 150—200 per acre.

(*Paragraphs* 37—41)

7. The State Government have approved the Dina Irrigation Project in the Chanda district at an estimated cost of Rs. 2.44 crores. This project can command an area of about 30,000 acres, but only 18,000 acres of cultivated land are available for irrigation at the tail end of the canal. On the other hand, 30,500 acres comprising 12,500 acres of wastelands and 18,000 acres of class 'B' forest lands are available in the upper reaches of the canal, and if this area is taken up for reclamation, an additional area of about 12,000 acres will become available for irrigation and there will be a substantial reduction in the estimated cost of the project. In this connection. the following suggestions have been made :—

(*i*) The forest lands may be released for cultivation.

(*ii*) The cost of reclaiming 12,500 acres of wastelands and 18,000 acres of class 'B' forest lands may be borne by the Agriculture Department, but not charged to the Dina Project.

(*iii*) The question of setting up lift irrigation projects along the Wainganga river should be investigated, so that the cultivated lands at the tail end which were to be irrigated from the projected canal from the Dina Irrigation project, may receive their irrigation supply from the lift irrigation projects. There seem to be good prospects of setting up lift irrigation projects along the Wainganga.

(*iv*) The possibility of establishing a mechanised farm in the area to be irrigated from the Dina project should be investigated.

(*Paragraphs* 42 *and* 43)

8. Most of the wastelands in categories I and II belong to the Government, and only a small area belongs to private individuals and village panchayats. It is likely that the bulk of the wastelands belonging to the Government have already been distributed, since the work of land distribution in the entire State was to be completed by the 31st March, 1961.

(*Paragraphs* 44 *and* 44.1)

9. The wastelands belonging to private individuals in category I may be reclaimed by undertaking suitable soil and water conservation measures, and the expenditure on these measures should be shared as under :—

(*a*) 75 per cent of the expenditure may be advanced as loan to the cultivators to be recovered over a period of 10—15 years, and

(*b*) 25 per cent of it should be treated as subsidy to be shared between the Centre and the State.

(*Paragraph* 442)

10. The cost of reclamation of the land in category II is rather high, and it will not be within the reach of the cultivators to undertake reclamation measures on their own. The work should, therefore, be undertaken by the State Government on behalf of private individuals, and the expenditure shared in the manner indicated for category I.

(*Paragraph* 44.2.1)

11. The lands belonging to village panchayats may, after reclamation, be given back to them for arranging follow-on cultivation.

(*Paragraph* 44.3)

12. The total cost of reclaiming 35,584 acres of wastelands in categories I and II (exclusive of the lands of which the cost of reclamation is reported to be very high, and of areas which cannot be brought under cultivation) comes to Rs. 38.20 lakhs, *i.e.*, Rs. 107 per acre. The estimated additional production from the reclaimed land is 6,532 tons, valued at Rs. 14.27 lakhs. Thus the value of production will cover the cost of reclamation in three crop seasons.

(*Paragraph* 48)

13. The following order of priority may be assigned to the two categories of wastelands :—

Category	*Priority*
II	1
I	2

(*Paragraph* 50)

Sd/-
(B. N. Uppal)
Chairman

Members

Sd/-
1. (F. C. Gera)
Sd/-
2. (R. V. Tamhane)

Co-opted members in the State

Sd/-
1. (D. R. Pradhan)
Secretary to Government,
R. D., Bombay.
Sd/-.
2. (D. D. Sathe)
Development Commissioner,
C. & R. D. Dept., Bombay.
Sd/-
3. (S. P. Mohite)
Agricultural Commissioner,
M. S., Poona.
Sd/-
4. (D. A. Gadkary)
Director of Minor Irrigation,
M. S., Poona.
Subject to comments endorsed, *vide* Appendix II
Sd/-
5. (J. V. Karamchandani)
Headquarter Conservator of Forests
Poona-1.

Sd/-
(A. S. Venu Gopalan)
Secretary

APPENDICES

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APPENDIX A

K. R. DAMLE, I.C.S.,
Secretary

No. F. 1024/SPL/59

GOVERNMENT OF INDIA
MINISTRY OF FOOD & AGRICULTURE
(Department of Agriculture)

New Delhi, June 11, 1959

My dear

You will agree that the importance of reclamation of culturable waste lands for the purpose of increased agricultural production cannot be over-emphasised. The extent of culturable waste lands in the country has been variously estimated and the figures run into millions of acres. These waste lands are of two categories:

(*a*) lands which are really adjuncts of village abadis and are meant to serve as pastures and fuel forests or sites for the extension of the abadis; and

(*b*) large blocks of land which have either gone out of cultivation or have never been brought under cultivation.

It is the latter category which affords the greatest promise for increased agricultural production. The site of large areas of uncultivated land has yet to be determined. Government, therefore, have decided to appoint a Committee of experts which will work in collaboration with experts in the States in regard to which the Committee will make the investigations.

2. The following will be the terms of reference of the Committee :—

(1) to make a survey of land classified as "other uncultivated land excluding fallow lands" and "fallow lands other than current fallows" and locate areas where large blocks of land are available for reclamation and resettlement;

(2) to suggest suitable measures for reclamation according to conditions in different areas and estimate the cost of reclamation and colonisation and the financial assistance and agricultural extension and training necessary for the settlers (the settlements being made on a cooperative basis);

(3) to suggest the terms and conditions upon which settlement should be made, the areas to be allotted and the payments to be made by settlers' co-operatives; and

(4) to estimate the economic aspects of such reclamation in terms of the expenditure involved, the likely addition to food production and the employment and income that would become available to settlers and their families and to lay down the priorities *inter se* between different categories of reclaimable lands.

3. The Committee will consist of the following :—

1.	Dr. B. N. Uppal, Agricultural Commissioner, Government of India	Chairman
2.*	Dr. J. K. Basu, Senior Director of Soil Conservation, Government of India	Member
3.	Shri F. C. Gera, Chairman, Central Tractor Organisation	Member
4.	Shri J. P. Mital, Irrigation Adviser, Ministry of Community Development and Cooperation ..	Member

In addition, the Committee will co-opt in individual States the following officers :—

1. The Development Commissioner;
2. The Revenue Secretary;
3. The Secretary of the Agriculture/Forest Department, or his nominee; and
4. A representative of the Irrigation Department.

4. During the course of the next two or three months, the Committee will take up preliminary work for collection of data with the help of the State Governments and will then visit individual States from the beginning of September, 1959. The intention is that the Committee should complete its work and submit its proposals in respect of one State in about a month and then proceed to take up the investigation in another State. In order to ensure effective coordination and speedy completion of the work, it is suggested that each State Government/Union Territory may kindly appoint a fairly Senior Officer who would be able to devote sufficient time to the work of the Committee, help it in collecting the necessary information and carry on correspondence with it. The name and designation of the officer may kindly be communicated to Dr. B. N. Uppal, Chairman of the Committee.

5. In view of the urgent need for bringing waste lands, wherever available, under cultivation and thus increasing agricultural production, it is hoped that the State Governments would kindly extend their full co-operation and provide the necessary facilities for the work of this Committee.

Yours sincerely,
Sd/- K. R. DAMLE

Chief Secretaries,
All States and Union Territor

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*On retirement of Dr. J. K. Basu, Shri M. S. V. Rama Rao, Senior Director of Soil Conservation, Government of India, was appointed a Member from the 3rd Feb., 1960 *vide* Memo. No. 12-1/59-GMF (Co.) dated the 3rd February, 1960 (Copy enclosed).

N. 12-1/59-GMF(Co.)
GOVERNMENT OF INDIA
MINISTRY OF FOOD & AGRICULTURE
(Department of Agriculture)

New Delhi, the 3rd February, 1960

Subject :—RECLAMATION OF CULTURABLE WASTELANDS IN THE COUNTRY —SETTING UP OF A COMMITTEE.

Reference this Ministry's express letter of even number, dated the 17th June, 1959, on the subject mentioned above. The following amendment may please be made in regard to the Membership of the Committee as mentioned in D.O. No. F. 1024/SPL/59 dated the 11th June, 1959, referred to therein :—

"Shri M. S. V. RAMA RAO,
Senior Director of Soil Conservation,
Government of India,

in place of Dr. J. K. BASU since retired".

Sd/- V. BALASUBRAMANIAN
Under Secretary

APPENDIX B

Questionnaire issued by the Wastelands Survey and Reclamation Committee

1. What is the total area of culturable wasteland in your State?
   (Culturable wasteland is defined as under :

   All lands available for cultivation, whether not taken up for cultivation or abandoned after a few years for one reason or the other. Such lands may be either fallow or covered with shrubs and jungles and which are not put to any use. They may be assessed or unassessed or may be in isolated blocks or within cultivated holdings. Land once cultivated but not cultivated for five years in succession is included in this category.)
2. What is the area under permanent pastures and other grazing lands ?
3. What is the extent of land under miscellaneous tree crops and groves ?
4. What is the extent of fallow lands other than current fallows ?

   (Curent fallows are defined as those lands which remain fallow for the current year only.

   Lands other than current fallows are defined as lands which are fallow for more than one year but less than five years.)
5. Out of the areas at questions 1, 2, 3 and 4 above, is it possible to demarcate blocks of 1,000 acres or more for purposes of colonization and resettlement ? If so, how many such blocks ?
6. How many blocks could be carved out if the size of the block is reduced from 1,000 acres and more to 500 acres and more ? So far as blocks of 1,000 acres or more are concerned, please give details of each block in the form at Appendix 'A' attached.
7. Have any colonization and resettlement operations been carried out in your State during the last 10 years ? If so, please give details of areas colonized, and resettled, the number of persons resettled, the location of the colonized areas, terms of allotment, and whether the colonization has been successful. The extent of financial assistance given to settlers may also be indicated.
8. Any other remarks that the State Government may like to make in the light of the terms of reference of the Committee.

APPENDIX 'A' VIDE ITEM 6 OF THE QUESTIONNAIRE

STATE :
DISTRICT :

Details in respect of Block No. ——————————*consisting of* 1,000 *acres or more*

(Where blocks of 1,000 acres or more lie contiguously, a single form can be used for the entire area; otherwise separate forms should be used for each block of land.)

1. Where is the block located? (Here mention the nearest village or town and the Revenue Tehsil in which the block is located).
2. Is the area included in any Community Development Block? If so, please give the name of the Block.
3. What is the nearest Railway Station and the distance of the Station from the block?
4. What is the nearest Post Office and the distance of the Post Office from the block?
5. What is the nearest Telegraph Office and the distance of the Telegraph Office from the block?
6. Is the block connected by road with adjoining villages and towns?
7. If so, is the road fair-weather or all-weather?
8. What is the total area of the block? (If possible, please also supply a map of the block.)
9. How much of the area belongs to Government or is with the Panchayats?
10. How much of the area is privately owned?
11. Is it necessary to acquire the whole or part of the land which is privately owned, in order to carry out the colonization operations in the block successfully?

12. If so, what would be the likely cost of acquisition ?
13. Is the area of the land suitable for cultivation as it is, or would it be necessary to do some reclamation work before it could be allotted?
14. If reclamation work is necessary, indicate whether the land is infested with jungle or with weeds or with shrubs and bushes.
15. Whether the land could be reclaimed with the use of manual labour or will it require reclamation by heavy tractors ? If the former, is adequate labour locally available ?
16. If there are no trees or weeds or shrubs and bushes on the land, is the land eroded ? If eroded, please indicate the extent of erosion and the soil conservation measures necessary to make it fit for cultivation.
17. What would be the approxima to cost of reclamation or soil conservation per acre of land in the block ?
18. What is the type of soil in the block ? (alluviums, black, red or lateritic).
19. Is the land flat or gently sloping or steep ? What is the depth of the soil ?
20. What crops are grown in the area round about the block ?
21. What is the yield per acre of each crop ?
22. What is the nearest marketing centre for these crops?
23. What is the extent and distribution of rainfall in the area ?
24. Can irrigation facilities be made available for the block ? If so, what kind of facilities ?
25. Whether these irrigation facilities will be perennial or non-perennial ?

26. If no irrigation facilities exist at present, whether any irrigation projects likely to be taken up in Third Year Plan will cover this land ?
27. What is the depth of sub-soil water ? Is water sweet or brackish ?
28. Are anti-malarial operations necessary in the area for successful colonization ?
29. Is any endemic disease prevalent in the area ? If so, do the State Government contemplate any measures to combat this disease ?
30. Is drinking water available in the block ?
31. Are there any drinking water wells in use ?
32. Is the area subject to deprodations of wild animals ? If so, what animals ?
33. Is the block likely to attract settlers from distant places in the State or from other States ?
34. If the block is not likely to attract settlers from distant places in the State or from other States, what kind of settlers would you recommend for colonization of the block ?
35. Do you think educated unemployed could be successfully settled in the block ?
36. What should be the unit of allotment per settler ?
37. Would you suggest that the settlers should put up their homesteads on allotted lands, or would you like to set up *abadis* for them ? If the latter, what should be the unit of allotment for residential purposes in the village *abadi* ?
38. Would it be necessary to organise any training for the settlers, before they are allotted land? (the settlement will be on co-operative basis).
39. Any other details which you may like to give in the light of the terms of reference.

APPENDIX C

Dr. B. N. UPPAL
Chairman, Wastelands Survey &
Reclamation Committee.

D.O. No. F.   /59-WLS&RC

GOVERNMENT OF INDIA
MINISTRY OF FOOD & AGRICULTURE
(Department of Agriculture)
KRISHI BHAVAN
NEW DELHI

January 2, 1960
Paus 12, 1881

Dear Shri

Kindly refer to my letter of even number dated the 10th August 1959, with which a copy of the questionnaire issued by the Committee was forwarded to you.

2. According to the questionnaire, the State Government was required to demarcate blocks of 1,000 acres or more out of the total area under "culturable waste", "permanent pastures and other grazing lands", "miscellaneous trees and groves" and "fallows other than current fallows", and to give full details of the blocks so selected in Appendix A attached to the questionnaire. The size of blocks was fixed at 1,000 acres or more as it was felt by the Committee that a sufficient number of blocks of this size would be available in all the States. The information now received from some of the States and our discussions with the Liaison Officers of the States of Madhya Pradesh, Bihar and Orissa have led us to think that the availability of culturable waste land in blocks of 1,000 acres or more for purposes of reclamation and resettlement may be limited. We have, therefore, decided to collect information as in Appendix A to the questionnaire issued with the Committee's letter referred to above, for all blocks measuring 250 acres or more.

3. While obtaining this information from the districts, it may be useful to get a certificate from the district officers that the areas other than those in blocks of 250 acres or more out of the total areas under the categories mentioned in para 2 above, are scattered in bits measuring less than 250 acres.

4. I am to request that urgent steps may kindly be taken to collect the required information in respect of blocks measuring 250 acres or more so that the requisite information is available to the Committee by the 31st January, 1960. In view of the fact that the Committee is required to complete its work within the next six months, it is requested that the information may kindly be obtained on a priority basis by deputing some officials to the different districts, if necessary. This should not, however, delay the

despatch of information in regard to blocks measuring 1,000 acres or more, which may have already been collected.

5. It appears that the term 'contiguous' used in Appendix A to the questionnaire sent to the States along with our letter of even number dated the 10th August, 1959, requires elucidation. I may observe that even if a block is interspersed with a few cultivators' holdings or some natural obstructions, it should be considered more or less compact or 'contiguous' so long as the operations for the reclamation of land included in it can be undertaken on an economic basis.

Yours sincerely,
Sd/- B. N. UPPAL

All Liaison Officers
in the States and Union Territories.

सत्यमेव जयते

APPENDIX D

Average Yield (in lbs.) Per Acre of Principal Crops in Maharashtra during 1958-59 (district-wise)

District	Crops													
	Rice	Jowar	Bajra	Maize	Ragi	Wheat	Small Millets	Gram	Sugar-cane	To-bacco	Gro-und-nut	Sesa-mum	Lin-seed	Cot-ton
West Khandesh*	406	550	331	480	524	558	258	354	3,333	224	622	266	240	585
East Khandesh	409	714	247	677	—	508	467	415	3,333	218	469	307	241	99
Nasik	969	222	273	634	933	406	375	330	5,333	224	440	266	240	111
Ahmednagar	938	459	211	509	382	411	451	333	6,666	550	475	233	240	183
Poona	920	380	266	291	525	411	748	354	8,333	220	576	300	202	183
Sholapur	785	440	79	420	448	379	400	262	6,583	312	647	200	180	129
North Satara	810	531	285	516	600	474	547	273	4,842	202	733	262	239	183
South Satara	795	710	165	480	600	428	630	272	5,250	385	466	267	212	86
Aurangabad	312	615	165	225	183	392	293	245	3,375	594	265	146	220	85
Parbhani	312	551	149	263	178	431	237	122	3,375	501	531	200	200	50
Nanded	368	556	149	234	177	288	233	288	4,262	497	531	192	200	71
Bhir	312	632	149	270	178	403	222	320	3,000	563	531	233	210	428
Osmanabad	312	563	149	570	183	422	204	315	3,750	436	531	280	200	43
Buldana	539	499	405	357	—	458	192	256	2,425	539	417	225	252	72
Akola	539	482	350	339	—	473	280	253	2,500	548	436	237	248	96
Amraoti	539	513	423	459	253	518	366	308	2,251	519	403	235	276	90
Yeotmal	539	464	375	368	—	441	201	255	3,375	546	326	213	209	58
Wardha	819	520	362	420	—	348	204	310	2,479	498	403	226	248	47
Nagpur	819	423	400	366	—	368	168	247	2,623	437	403	250	210	47
Bhandara	956	344	280	367	257	303	225	223	2,707	597	403	248	167	47
Chanda	649	353	416	416	250	358	185	223	3,751	621	405	167	208	46
Bombay	1,452	—	—	—	—	—	—	—	—	—	—	—	—	—
Kolaba	1,226	—	—	—	600	—	—	292	2,662	—	—	248	—	—
Ratnagiri	1,060	—	—	—	593	—	434	332	2,664	—	664	250	—	—
Thana*	1,450	—	—	—	518	—	533	298	2,673	—	—	175	—	—
Kolhapur	936	933	783	569	674	377	507	236	7,500	385	667	311	—	85
STATE	942	514	232	468	639	422	405	302	6,098	395	373	213	211	73

*Estimated.

APPENDIX E

Land Utilisation Statistics of Maharashtra State for the year 1956-57 (*district-wise*)

(figures in '00 acres)

District	Total geographical area		Forests	Land not available for cultivation		Other uncultivated land excluding fallows			Current fallows	Fallows other than current fallows	Net area sown
	By professional survey (sq. miles)	By village papers		Barren and unculturable land	Land put to non-agricultural uses	Culturable waste	Permanent pastures and other grazing land	Land under misc. tree crops & groves			
West Khandesh	4,821	39,798	13,906	5,150	280	836	9	1,255	656	387	17,319
Nasik	6,021	38,321	8,345	3,668	23	263	142	1,550	396	807	23,127
Thana	3,658	23,924	8,891	1,877	45	338	538	1,318	1,655	1,660	7,602
Greater Bombay	186	836	25	238	48	97	9	114	7	84	214
Kolaba	2,723	16,967	4,034	3,018	56	803	931	287	511	2,214	5,113
Ratnagiri	5,013	31,662	469	8,359	59	7,156	572	296	1,117	4,537	8,562
Ahmednagar	6,591	42,049	4,842	3,611	97	396	—	650	570	831	31,052
Poona	6,032	38,452	4,573	3,748	834	424	19	804	674	2,781	24,595
North Satara	4,041	26,056	3,667	2,347	395	188	4	636	1,807	232	16,780
South Satara	3,297	21,287	1,156	968	126	374	—	633	129	2,087	15,814
Kolhapur	3,205	20,022	3,789	1,097	507	2,031	167	1,201	487	862	9,881
Sholapur	5,811	37,031	992	1,626	145	683	83	1,310	1,643	1,596	28,953
East Khandesh	4,575	28,763	4,004	1,861	26	226	11	2,273	175	323	19,859
Aurangabad	6,314	40,208	2,028	580	1,079	467	38	2,019	569	2,442	30,986
Parbhani	4,853	30,923	439	412	703	346	158	1,167	3,806	568	23,324
Bhir	4,261	27,599	339	341	624	475	24	1,187	3,291	1,832	19,486
Osmanabad	5,532	34,662	31	365	673	357	121	867	1,962	3,938	26,348
Nanded	4,805	29,759	2,455	1,211	1,004	859	160	1,760	2,221	407	19,682
Buldana	3,751	24,146	3,025	646	675	439	48	1,240	196	1,327	16,550
Akola	4,095	26,094	2,169	954	838	179	18	1,520	319	1,314	18,783
Amraoti	4,723	30,138	8,535	411	696	437	371	1,409	254	1,448	16,577
Yeotmal	5,246	33,407	7,790	1,948	956	646	636	987	459	2,057	17,928
Wardha	2,429	15,537	1,670	206	858	737	353	1,266	264	340	9,843
Nagpur	3,842	24,430	4,538	455	1,358	1,311	153	2,966	338	346	12,965
Chanda	9,200	59,882	35.588	615	2,472	2.271	553	5,279	265	461	12,328
Bhandara	3,582	22,831	6,476	420	1,788	685	237	3,291	298	361	9,275
STATE	1,18,609	7,64,729	1,33.776	46,132	16,900	23,024	5,355	37,285	24,069	35,242	4,42,946

APPENDIX F

Details of Blocks in Categories I and II offered for Reclamation in Maharashtra

District	Name of block	Block No.	Nearest rly. station	Accessible by all/fair weather road	Whether included in C.D. Block	Total area (acres)	Extent of rainfall (inches)	Depth & nature of sub-soil water		Endemic diseases
								Depth	Nature	
1	2	3	4	5	6	7	8	9	10	11
				Category I						
West Khan-desh	Khordor	1	Shirod	All weather	N.R.	584	21	30	Sweet	No
	Vadane	2	Dhulia	All weather	N.R.	450	21	30	Sweet	No
	Amdad	3	Dhulia	All weather	N.R.	657	21	30	Sweet	No
	Bhadarwadi	4	Dhulia	All weather	N.R.	567	21	30	Sweet	No
	Burzad	5	Dhulia	All weather	N.R.	850	21	30	Sweet	No
	Velhane	6	Borvikir	All weather	N.R.	667	21	30	Sweet	No
	Mordar	7	Shirud	All weather	N.R.	588	21	30	Sweet	No
	Kundane	8	Shirud	All weather	N.R.	489	21	30	Sweet	No
	Kundane	9	Shirud	All weather	N.R.	422	21	30	Sweet	No
	Dhandane	10	Dhulia	All weather	N.R.	544	21	30	Sweet	No
	Dhandane	11	Dhulia	All weather	N.R.	261	21	30	Sweet	No
	Sayane	12	Dhulia	All weather	N.R.	581	21	30	Sweet	No
	Sayane	13	Dhulia	All weather	N.R.	456	21	30	Sweet	No
	Sawai	14	Dhulia	All weather	N.R.	427	21	30	Sweet	No
	Chinchwal	15	Dhulia	All weather	N.R.	388	21	30	Sweet	No
	Songir	16	Nardana	All weather	No	1,261	21	30	Sweet	No
	Nagaon	17	Dhulia	All weather	No	1,162	21	30	Sweet	No
	Vajirkhede	18	Dhulia	All weather	No	1,186	21	30	Sweet	No
	Babhulwadi	19	Dhulia	All weather	No	1,102	21	30	Sweet	No
	Lamkani	20	Dhulia	All weather	No	1,827	21	30	Sweet	No
	Chinchwar	21	Dhulia	All weather	No	2,655	21	30	Sweet	No
	Nikumbha	22	Dhulia	All weather	No	2,695	21	30	Sweet	No
	Varzadi	23	Virdel Rd.	Fair weather	No	1,075	13—17	—	Sweet	No
	Anjanvikire	24	Virdel Rd.	Fair weather	No	1,056	13—17	—	Sweet	No
	Halti Kd	25	Dondaicha	Fair weather	Yes	1,000	23—25	22—30	Sweet	No
	Isarde	26	Nandurbar	Fair weather	Yes	1,000	23—25	20—25	Sweet	No
	Khori	27	Nandurbar	Fair weather	No	3,000	23—25	20—25	Sweet	No
	Mhasale	28	Dondaicha	Fair weather	No	1,500	23—25	40—60	Sweet	No
Jalgaon	Vihale	29	Varangaon	All weather	—	406	N.R.	100	Sweet	No
	Shelwad	30	Bodwad	All weather	Yes	540	N.R.	20	Sweet	No

APPENDIX F—*contd.*

1	2	3	4	5	6	7	8	9	10	11
Jalgaon—*contd.*	Pimpalgaon ..	31	Varangaon	All weather	Yes	259	N.R.	40	Sweet	No
	Satara	32	Bhusawal	All weather	Yes	365	N.R.	40	Sweet	No
	Golkhed ..	33	Jamner	Fair weather	Yes	512	20—35	—		No
	Londha	34	Rajramane	Fair weather	Yes	600	24	35	Sweet	No
	Junone	35	Chalisgaon	Fair weather	Yes	368	24	60	Sweet	No
	Kargaon	36	Chalisgaon	Fair weather	Yes	421	24	25	Sweet	No
Buldana	Atali	37	Khamgaon	Fair weather	Yes	234	25—30	—		
	Borjawala	38	Nandura	Fair weather	Yes	308	25—30	25	Sweet	No
	Dusarbid	39	Jalna	Fair weather	Yes	200	25—30	40	Sweet	No
	Nasirabad	40	Jalna	All weather	Yes	200	25—30	40	Sweet	No
	Shirrnes	41	Jalna	No road	Yes	200	20—25	30—40	Sweet	No
	N. Daltapur, Saranapur Sendala	42	Khamgaon	Fair weather	Yes	252	25—40	30	Sweet	No
	N. Deshmukh, Parkhed Mohane Pathardi	43	Khamgaon	Fair weather	Yes	375	25—40	30—40	Sweet	No
	Kanka Jembhurna Drugwani, Maljanori	44	Khamgaon	Fair weather	Yes	205	25—40	30—40	Sweet	No
South Satara	Vita Yetgaon ..	45	Kard	Fair weather	Yes	900	22	30	Sweet	No
Nasik	Kharde	46	Namad	No road	Yes	1,915	35—40	N.R.	N.R	No
				Category II						
Kolaba	Karivalne ..	47	Karjat	All weather	Yes	429	125	N.R.	N.R.	No
	Khavali	48	Khopali	All weather	Yes	312	150	30	Sweet	No
	Kumbharshet ..	49	Khopali	All weather	Yes	592	175	16	Sweet	No
	Pashane	50	Dangani	Fair weather	Yes	327	150—175	20	Sweet	No
	Anjap Kashela ..	51	Bhivapuri	Fair weather	Yes	462	150	25	Sweet	No
Chanda	Wairaged	52	Warsa	Fair weather	Yes	2,105	50—60	40—50	Sweet	No
	Darshami Chak ..	53	Mul-Maroda	Fair weather	Yes	1,446	60	15—20	Sweet	No
	Chak Petgaon ..	54	Mul-Maroda	Fair weather	Yes	222	40—50	N.R.	Sweet	No
	Chak Bembal ..	55	Mul-Maroda	Fair weather	Yes	415	35—45	N.R.	N.R.	No

APPENDIX G

Statement Showing the Breakdown of Ownership of areas offered for Reclamation

District	Block No.	Area of block	Area belonging to		
			Govt.	Private individuals	Panchayats
		Category I			
West Khandesh	1—28	28,450	26,552	1,122	776
Jalgaon	29—36	3,471	2,931	86	454
Buldana	37—44	1,974	1,974	—	—
South Satara	45	900	900	—	—
Nasik	46	1,915	1,915	—	—
		Category II			
Kolaba..	47—51	2,122	1,540	582	—
Chanda	52—55	4,188	3,381	807	—
TOTAL		43,020	38,193	2,597	1,230

APPENDIX H

Comments by the Additional Chief Engineer (IP) & Joint Secretary to Government of Maharashtra on the paras 42 & 43 of the draft report on location and utilisation of wastelands in India—Part XI—Maharashtra

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Dina Project as approved by Government of Maharashtra contemplates irrigation of 30,500 acres. In order to achieve this it is necessary to have about 46,000 acres of land under gross command, assuming 67% of the gross command as annually irrigable, which is generally adopted in this State.

As per the statistics given in the approved Dina Project only about 21,500 acres of forest and culturable wasteland and 1700 acres of cultivated land is commanded by 21 miles of Dina Main Canal. If the irrigation is to be restricted to forest land and culturable wasteland it will be necessary to bring an additional area of 24,500 acres under command. This means the whole length of 16 miles of Chamurshi Branch as contemplated in the approved project is to be constructed and hence there appears no possibility of any saving in the cost.

Even assuming that cultivated land is also to be brought under irrigation a part of the Chamurshi Branch has to be constructed. Considering the cost of bringing forest land and culturable wasteland under cultivation the proposal to delete the tail portion of the canal and to bring forest and culturable wasteland in the head reach, under irrigation may not be economical to the extent of 30 lakhs.

As regards proposal (iv) under para 43 of draft report, the area under the proposal of setting up of lift irrigation projects along Wainganga will depend upon the extent of the post-monsoon flow in the river for irrigating the perennial crops under lift irrigation scheme.